

224



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,449	01/20/2004	Vikram R. Jamalabad	010-99-X05-D2 (1100.11021)	5168
128	7590	12/14/2004	EXAMINER CABRERA, ZOILA E	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			ART UNIT 2125	PAPER NUMBER

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/762,449	<b>Applicant(s)</b> JAMALABAD ET AL.	
	<b>Examiner</b> Zoila E. Cabrera	<b>Art Unit</b> 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 36-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-38 and 40 is/are rejected.
- 7) ☒ Claim(s) 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/23/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: Applicant is requested to provide the information on the blank spaces on Page 1, lines 5, 8, 9 and Page 18, line 26. Appropriate correction is required.

### *Claim Objections*

2. Claim 40 is objected to because recites the same limitations twice, i.e. lines 11-14, "obtaining first curve data representing at least one layer area to be filled with a first material".

Claim 40, line 10, recite "an area less than that of said second". It is not clear what the "second" is referring to. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 36-38 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by **Rock et al (US 5,555,481)**.

Regarding claim 36, **Rock** discloses a program storage device readable by a machine tangibly embodying a program of instruction executable by the machine to perform method steps for improving layer side surfaces of layer areas to be filled by

Art Unit: 2125

layered manufacturing (Col. 7, lines 37-39 and lines 51-57; Fig. 5), the method steps comprising:

- obtaining first curve data representing at least one layer area to be filled with a first material (Figs. 1-2, element 1; Col. 2, lines 65-67; Col. 3, lines 2-7); and generating second curve data representing a second layer area to be filled with a second material, such that said second layer area side surface abuts said first layer area side surface over at least a portion of said first curve (Col. 6, lines 26-42; Figs. 1-2, element 2; Col. 5, lines 62-67, i.e., second class material which was deposited along with the first class material and surrounds the first class material in three dimensions. Please note that the first class material 1 as shown in Fig. 2 is surrounded by second class material 2 as partly shown in Fig. 2.).

As for claim 37, **Rock** discloses

- said obtaining and generating steps are executed at least once for each of a plurality of stacked layers for which said layer side surface improving is desired (Fig. 3; Col. 6, lines 22-51).

Regarding claim 38, **Rock** discloses a program storage device readable by a machine tangibly embodying a program of instruction executable by the machine to perform method steps for providing support underneath material layer areas to be filled by layered manufacturing, the layer areas including first material areas to be filled with a first material (Col. 7, lines 37-39 and lines 51-57; Fig. 5; Col. 8, lines 9-14), the method steps comprising:

- obtaining a first data set having a plurality of first layer data sets representing said layer areas to be filled by layered manufacturing (Col. 7, lines 37-39 and lines 51-57; Fig. 6; Col. 8, lines 9-13 and 23-25); and  
generating a second data set having a plurality of second layer data sets representing support layer areas to be filled by layered manufacturing (Fig. 3, all the layers that are supporting the top layer correspond to support layer areas. Please note that Rock clearly discloses that the model geometry and also its material composition may be sliced into sections or layers, Col. 7, lines 37-39 and 51-52),  
wherein said first layer data sets define unsupported structures defining void volumes underneath said unsupported structures (Fig. 3, for corresponding numerals 1 and 2 see Certificate of Correction Fig. 3, please note that underneath the unsupported structure of the top layer of first class material 1 a void volume is defined and filled with the second class material 2), wherein said second layer data sets define support structures having a support structure volume and supporting said unsupported structure (Fig. 3, all the layers that are supporting the top layer correspond to support layer areas), wherein said support structure volumes are substantially less than said void volumes (Fig. 3, for each layer, all the areas being filled by second class material 2 correspond to void volumes. Please note that the support structure of first class material 1 is less than said void volumes of second class material 2).

With respect to claim 40, **Rock** discloses a program storage device readable by a machine tangibly embodying a program of instruction executable by the machine to perform method steps for providing support underneath layer areas to be filled by layered manufacturing, the layer areas including first material areas to be filled with a first material and second material areas to be filled with a second material (Col. 7, lines 37-39 and lines 51-57; Fig. 5; Col. 8, lines 9-14), the method steps comprising:

- obtaining a pair of layer area data sets having a first upper layer data set representing said first upper layer area, and a first lower layer data set representing a lower layer area to be filled with said first material (Fig. 3, upper layer represents the top layer and a first lower layer represents any other bottom layer); generating a second upper layer data set representing a second upper layer area which is a subset of said first upper layer area and has an area less than that of said second (Fig. 3, i.e., layer 3, from bottom to top, has an area less than the other layers and it is a subset of upper layer area); obtaining first curve data representing at least one layer area to be filled with a first material obtaining first curve data representing at least one layer area to be filled with a first material (Figs. 1-2, element 1; Col. 2, lines 65-67; Col. 3, lines 2-7); and generating second curve data representing a second layer area underneath said first layer area to be filled with a second material, such that said second layer area is less than said first layer (Fig. 3, the second layer, from top to bottom, is

Art Unit: 2125

filled with material 2. Please note that the area filled with material 2 on the second layer is less than the area filled with material 1 on the top layer).

***Allowable Subject Matter***

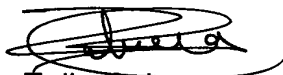
4. Claim 39 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit 2125 are (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

  
Zoila Cabrera  
Patent Examiner  
12/9/04